

Rural Livelihood and Food Security: Insights from Srilanka Tapu of Sunsari District, Eastern Nepal

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ABSTRACT : Food security is the foremost need of every human society. It is a fundamental right and government responsibility but still food insecurity is prevalent in rural areas of least developed nations. To cope with food insecurity, undertaking diverse income generating activities is common as well as key strategy adopted by rural people. The objective of this study is to assess rural livelihood and food security status of a remote island named Srilanka Tapu of Sunsari district. A random sampling technique was used to collect primary data from 40 rural household heads using semi-structured questionnaire. Descriptive methods were used for analyzing. The findings revealed that the food security situation of the Tapu is insecure. Most basic infrastructures and social services needed for people livelihood such as road, electricity sufficient food availability, education, healthcare, sanitation, etc. were found to be extremely poor. Most of the households are small scale farmers involving themselves in diverse livelihood activities which are mostly temporary, low-skilled and low paying. However, people are fulfilling their food needs at every cost but are highly vulnerable to food insecurity. Also, their lives security is equally vulnerable because of disastrous Koshi River flooding which occurs every year in the Tapu. The findings therefore critically suggest that food security of remote and vulnerable human settlements should be at top priority in policy formulation and implementation level. The study also recommends a need for an in-depth research for making evidence based policy interventions for improvement of diversify rural livelihood along with sustainable environment.

KEY WORDS : Food security, diverse livelihood, vulnerable, lives insecurity, sustainable

I. INTRODUCTION

The economy of Nepal is agrarian with 80 percent of the populations deriving their livelihood from agriculture (Davis & Li, 2013) and in rural areas, the majority adopting subsistence agriculture as the mainstay of their livelihoods (CBS, 2011). Also, poverty in Nepal is concentrated in the very sector and is predominantly a rural phenomenon. In 2010/11, 27 percent of the rural population lives below the poverty line as compared to 15 percent of the urban population (Davis & Li, 2013). Nepal's poverty is attributed to many factors. Among many, remoteness and traditional livelihood strategies undoubtedly are the greatest constraint for growth and prosperity (Karkee, 2008). Nepal faces considerable problems in terms of soft infrastructure (clinics, schools, service centers) and hard infrastructure (roads, electricity) in most of the remote areas. Nepal's poor road infrastructure which is one of the least developed in the world prevents the development of markets and hence, the growth of farm and non-farm incomes (WFP, 2005). Similarly, Nepal's population has a diversity of ethnic groups and languages with a caste system in addition with gender asymmetry which defines their access to resources and opportunities (FAO, 2010). Because of these structural problems, primarily women followed by populations living in certain geographical areas, identifying with certain caste/ethnic groups and practicing certain livelihoods are particularly vulnerable groups. These groups comprise approximately 38 percent of the national population (CBS, 2011).

Food security and sustainable livelihoods both emphasize household well-being over time; both focus on access to food and incomes; and both demonstrate a concern with risk and vulnerability. Poverty, food insecurity, and livelihood are closely related in Nepal as households which are vulnerable to food insecurity have insufficient livelihood assets (human, social, natural, physical and financial) to produce enough food or earn sufficient income to purchase food and manage shocks. Consequently, they cannot meet their essential food and non-food consumption needs, thereby impairing their labor productivity and ability to engage in livelihood activities (CBS, 2011). These households therefore have a high exposure to shocks and stresses that reduce their income or food production and require additional expenditures. All these situations often serve rural livelihood to be food insecure. In Nepal, rural livelihood is characterized by small land holdings, small scale agriculture using family labour, livelihood diversification frequently playing a significant role in flexibility and well-being to livelihoods and its dual economic nature where agricultural household is simultaneously the producer and the consumer, with poorer people spending a higher proportion of their income on food (Gautam & Andersen, 2016).

Achieving food security is still a challenge due to the global approach being employed in every situation instead of formulating and applying solutions based on specific locations with an understanding of the social system and livelihood activities (Amurtiya, 2015). Nepal's agricultural production has hardly kept up with the demands of its growing population over the past decade (WFP, 2009). Low productivity and lack of agricultural competitiveness serve to magnify Nepal's poverty and food insecurity. In rural areas, difficult terrains, low availability of productive land and variability in climatic factors have added more hardship to people's livelihood. Also, migration from rural to the urban areas within Nepal and abroad has adversely affected agricultural productivity and food security. Poverty and limited employment opportunities have become a push factor for out migration while even menial employment in urban areas has pulled people in from the rural areas. Those who out-migrate for the purpose work are usually the male members of farm families leaving the women to do all the farm labor as well as the farm management. All these factors have resulted in a rise in real wages affecting overall competitiveness of agriculture (GoN & FAO, 2013). As agriculture failed to grow, the major problem in rural areas is lack of food. Here, local food production sometimes covers just few months of annual household needs. This problem is further exacerbated by very low purchasing power and extremely high market prices. In some cases, due to the rugged terrain and lack of roads, people cannot access food even when they can afford to buy it. Also, the influence of dominant culture of eating rice and poor knowledge and utilization of high value local food items have caused rural households more likely to be food insecure. However, the population of Nepal is known for its resilience. They have learned to cope during this mess of distress with various coping strategies (WFP & NDRI, 2010).

Coping strategies of households with food insecurity encompass loan to meet their food needs, consuming seeds stock, relying on inexpensive foods, limiting meals size, selling livestock, selling other household assets, working in short-term labor positions, migrating out in search of employment and so on (Khatriwada, 2010; NDHS, 2011). The coping mechanism is unsustainable and yet has intensified during the past years forcing them into a vicious circle of deepening poverty. Moreover, vulnerable caste groups are most likely to suffer food insecurity consequences as the greatest disparity is found there among Dalits, Adivasi, Kamaiyas (WFP, 2009). Furthermore, they have limited knowledge regarding nutrition, appropriate hygiene and caring practices, and they tend to place women in disadvantaged positions within the household and communities (Shively, et al., 2011) which makes the situation even worse. This study investigates the situation of food security and livelihood strategies of a rural community of Srilanka Tapu in Eastern Nepal.

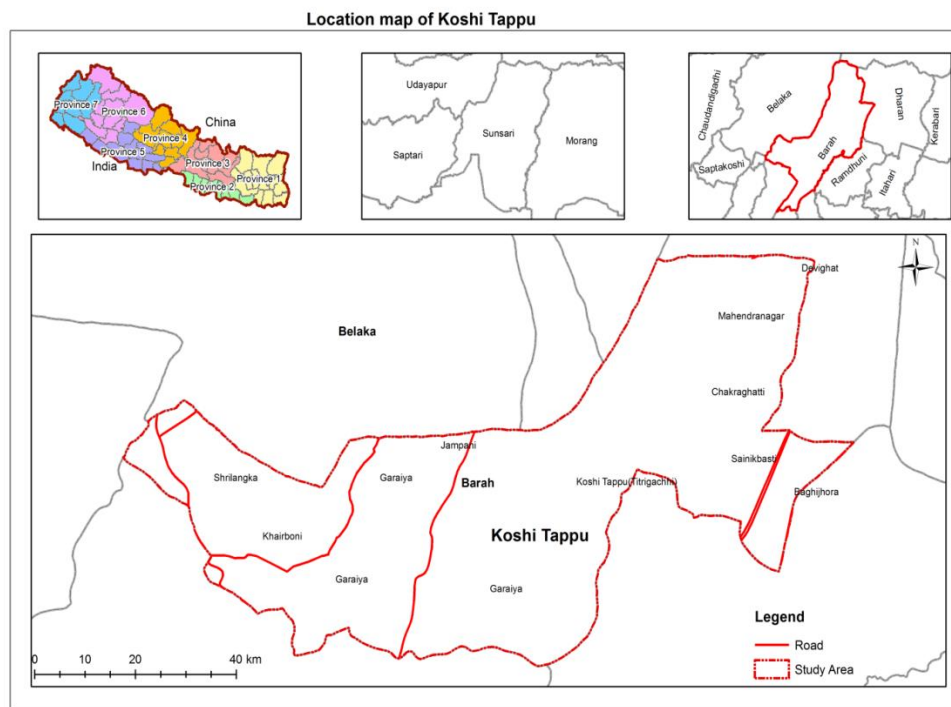
II. METHODS AND MATERIALS

The data on which this paper is based were produced from household surveys and key informants' interviews in the months of July 2017. Semi-structured interviews were conducted within 40 households (HHs) i.e. 20 households in each two wards. Both male respondents and female respondents from the HHs involving in any livelihood activities were randomly selected. These respondents include all the caste groups in the village. They were asked a total of 100 questions that were mostly objective. For subjective information, focus group discussion (FGD) and key informant interview (KII) were conducted. Local teachers, local leaders, women and personnel from ward administration offices were participated for this purpose. Since the study principally emphasizes on primary data, was the crux of data collection. The field visit was conducted in a week with an enumerator. During the field research, informal interview was carried out with villagers and their daily lives were observed. In addition to the primary data from the field, statistical reports, government policy documents and other published and unpublished materials of relevant organizations were consulted as the secondary sources of information.

III. THE STUDY AREA

This study was conducted in Srilanka Tapu of Sunsari district in order to assess food security with respect to livelihood approach in rural communities of Nepal. Srilanka Tapu is a small village surrounded by Koshi River.

It is extended over 14 km north-west and 6 km east-west as its area coverage.



Agriculture and livestock are major occupations of people living in Tapu. Although, Srilanka Tapu is geographically a Tarai land, it exemplifies that some parts of Tarai can also be largely rural and underdeveloped. It is such remote island where extremely marginalized group i.e. Madhesi ethnic minorities reside. Poverty, illiteracy, poor nutritional status and unemployment including political and economic discrimination are their major problems which exacerbate their vulnerable to food insecurity. Such island communities also deserve special attention in terms of assessing and monitoring hazard risk and understanding hazard impacts and longer-term effect. For this a long term dialogue between island communities, local level bodies and also the private sector is vital to take on the responsibility. According to new local level structure, the Tapu encompasses ward 6 (former ward 5 of Mahendranagar VDC and part of ward 9 as well as former ward 4 and 5 of Prakaspur VDC) of Baraha Municipality of Sunsari district. The Tapu was previously known as Garaiya Tapu, at present is famous as Srilanka Tapu.

IV. RESULTS AND DISCUSSIONS

Demographic Characteristics : Demographic characteristics are an important component for the analysis of socio-economic condition of the community. As per table 1, most of the respondents are males aged between 15 to 60 years old. Madhesi and Janajati are two predominant ethnic groups in Srilanka Tapu. Madhesi ethnicity includes sub-castes such as Chandrabansi, Chaudhari, Urau, Kabirath, Mandal, Gudi which are the most underprivileged groups being at the bottom of their own caste hierarchy. Pahadi communities such as Rai, Shrestha and Magar are immigrants from different parts of hill districts. Janajatis include Rai, Shrestha and Majhi as major sub-castes where Majhi comprises the largest percent of the population.

Table 1: Demographic Characteristics in Srilanka Tapu

Characteristics	Frequency	Percentage
Gender		
Females	5	12.5%
Males	35	87.5%
Age		
15 to 60	35	87.5%
>60	5	12.5%

Marital status		
Single	4	10%
Married	34	85%
Widowed	2	5%
Ethnicity		
Madhesis	34	85%
Janajatis	6	15%
Educational status		
No schooling	22	55%
Primary	6	15%
Secondary	9	22.5%
Intermediate	3	7.5%
Years of Residency		
>10 years (permanent)	35	87.5%
<10 years (migrants)	5	12.5%
Households Head		
Female (mean age=49)	4	10%
Male (mean age=45)	36	90%
Family Type		
Nuclear (4 or less)	17	42.5%
Joint (5 to 20)	23	57.5%

Source: Field Visit, 2017

Thirteen percent (13%) migrants as reported were from neighboring districts in particular Udyapur, Dhanusha, Saptari, Ramechhap and Bhojpur after purchasing land in the Tapu. Nepalese society is a patriarchal society; thereby male members of the family are often the household's head who are the ultimate decision makers of their livelihood aspects. The study shows that females get to be household head only when their husbands are engaged in foreign labor (for married women) or at old age mostly after the death of their husband. Most of the households have joint family ranging from 5 to 20 members living together and mean size of household is 10 persons. Poor educational status is prevalent in the study area which underscores the seriousness of the food security situation. For attaining food security, education attainment is considered as its essential component. Studies have shown households whose members are educated are more likely to be economically mobile, have better health and nutritional status, and are better able to meet their food and non-food needs (WFP, 2005).

Community Infrastructure and Services: In the Tapu, most of the houses are very small in size made of clay, bamboo and thatch roofs. Use of cement and metal roofing is minimal. As most of the households reported living jointly, with average 10 persons in a house, overcrowding of room is common. There is no electricity in the Tapu. Solar panel is therefore the main source of lighting. Battery flashlight is used only for emergency purposes by few households. Firewood is major energy source for cooking. Only 3 to 4% of households use cylinder gas, dry cow dung and corn cob as cooking fuel. The source of firewood is Koshi River where sufficient wood, timber and logs used as firewood during the summer are drifted freely along the river and people have open access to collect it. Hand pump is the main source of drinking water which is usually installed within the house compound. The water from the pump is used directly for drinking and cooking purposes. Poor transportation network is one of the major problems in the study area. This village and market centers & district headquarter are connected by poor village road. In between, the locals have to cross a section of Koshi via boats often risking their lives especially during monsoon. Facility for life jackets and keeping proper record of passengers when they are on board are underestimated by both boat operators and passengers despite of yearly boat capsizing incidents. Due to poor road and transport linkage, locals have no choice of easy transportation modes. They are compelled to use exhausting and time-consuming modes of transport as shown in the table 2.

Table 2: Modes of Transport in Srilanka Tapu

Types	Total HHs	In percent	Remarks
Motorbike	4	10%	Villagers have to use boat to cross a section of the river to come out of the place for several purposes.
Bicycle	19	48%	
Foot	40	100%	
Boat	40	100%	

Source: Field Visit, 2017

Access to education and health services are another major problem in the sampled communities. There are only three schools in the Tapu (two government schools; primary and lower secondary and a boarding school). The boarding school is also a primary school. More than ninety percent (90%) students aged between 5 to <15 years were reported to enroll in community schools. Out of enrolled students, only twenty percent (20%) students were reported attending boarding schools and also found male students being comprised its significant percent. To achieve further education, the nearest school is around one to two hours away on average from the community. Also, they have to face security issues to reach to school as they have to cross a section of Koshi on the way. Especially during monsoon, it becomes impossible for those students to pursue their classes because of widened and fast water current. Therefore, they fail to continue their further studies.

Table 3: Percentage of HHs Difficulty in Accessing Health Services

HHs	Sample (40)	In %	Reasons
Health services inside Tapu	32 HHs have no health access	80%	1. Only one health post in the wards
			2. Health staffs not available
			3. Deliver of basic health services only
			4. Medicines provided not effective
Health services from outside Tapu	almost households		1. Long distance
			2. Cost of treatment (expensive, unaffordable)

Source: Field Visit, 2017

Similarly, eighty percent (80%) households have been experiencing hardship in accessing health services for a long time period due to several constraints as shown (Table 3).

Livelihood Strategies in Srilanka Tapu: Rural households in Nepal often engage in diverse livelihood activities to meet household priorities like food, income, access to services, etc. (Koirala, 2010; Rai, 2011). Similarly, most of the households in the study area were found to employing a combination of livelihood activities.

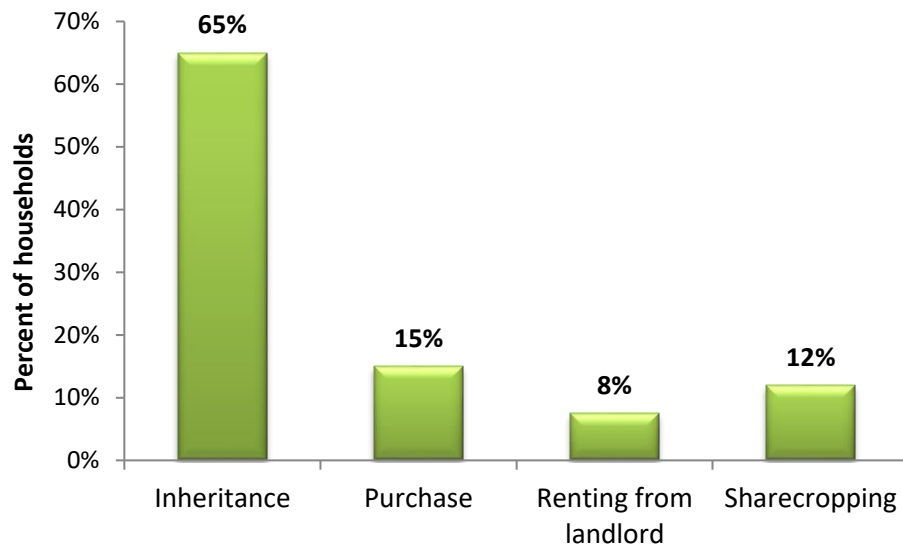
Table 4: Livelihood Activities and Its Contribution to Annual Income

SN	Livelihood class	% HH	Primary share	Secondary & tertiary share
1	Agriculture	55%	Sales of crops (83%)	Livestock, remittance (17%)
2	Livestock	10%	Sales of livestock (84%)	Farming, fishery (16%)
3	Remittance	10%	Remittances (89%)	Farming, livestock (11%)
4	Government services (teacher)	7%	Salary (76%)	Farming, livestock (24%)
5	Wage labor	5%	Wage labor (89%)	Farming, livestock (11%)
6	Fishery	3%	Sales of fish (100%)	
7	Others (small shop & commerce, mason, plumber)	10%	Small shop, commerce, skilled work (71%)	Farming, livestock (29%)

Source: Field Survey, 2017

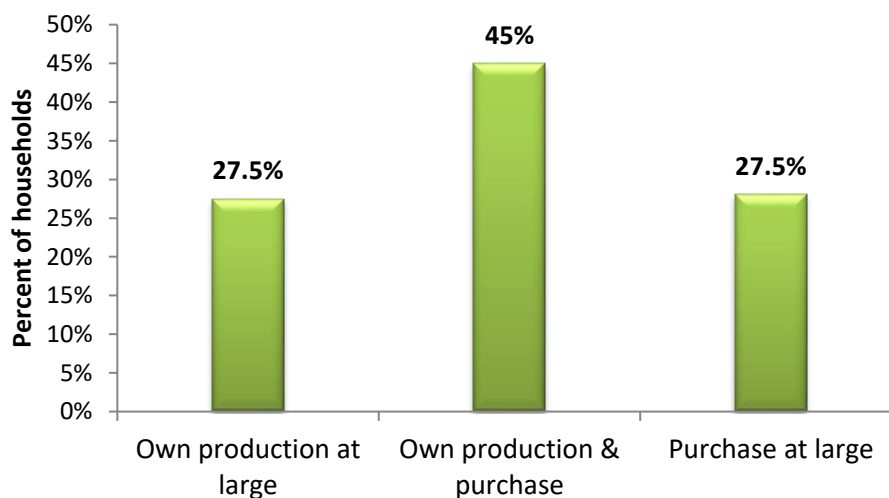
As can be seen, there are seven reported livelihood classes. Agriculture-based households are most prevalent in the area and more importantly all livelihood classes recorded rely on one activity for over 70% of their total annual income. Such heavy dependency on single activity can be threatening to households in particular farmers when subject to crop failure due to natural causes such as heavy rainfall/no rainfall, infertility, pests, etc. or physical/financial reasons such as lack of access to agricultural inputs in required time. The average landholding size for sampled households is 1.35 hectares with a wide variation in size from 0.23 hectares to a maximum of 6.77 hectares. Findings indicate that households used a combination of one or more of the main mediums of land acquisition as shown in figure below.

Figure 2: Medium of Land Acquisition



Nature of soil in the Tapu is sandy which is suitable for cultivation of maize, wheat, pulses and vegetables farming. Commercial vegetable farming is therefore practiced by forty-eight percent (48%) of households reporting access to land. Potato is cultivated in large scale which approximately covers 0.152 hectares mean land size. Other major vegetables cultivated in large quantity are meter bodi, tomato, cucumber, chilly, cabbage, okra, bitter gourd, etc. In the Tapu, the land is least fit for rice. Seventy-eight percent (78%) households' plant both monsoon and summer crops while remaining twenty-two percent (22%) reported to grow only single crop i.e. either monsoon or summer crop in a year in this village. Small landholding size, sandy (*balaute*) land and lack of irrigation facility are some of the major causes for households to plant only a single crop in a year. Commercial vegetables farming and maize cultivation are found to be the only two major crops contributing significantly to income source of the households having access to any land. Other crops cultivations are only subsistence in nature. Although maize production is the highest among all crops production, it is reported to be sold. And with that income, households in the Tapu tend to fulfill their rice sufficiency level. All three mediums of basic food sources; own production, purchase and both are used by households to fulfill their food needs as shown in the figure below. The figure also represents the poor situation of households' level of food sufficiency from their own production.

Figure 3: Sources of Food



It is evident that the study site is rice deficit as rice is cultivated only by 43% of households. Rice is the major food in Nepalese food culture. In food security, it therefore becomes important to assess households' rice sufficiency level. Only twenty-five percent (25%) of households reported to have rice sufficiency level from their own production. Remaining eighteen percent (18%) are insufficient rice cultivators and fifty-seven (57%) with no rice cultivation.

Households with such rice insufficiency solely depend on purchase/markets to fulfill their basic food need. Undoubtedly, Nepalese food habit therefore can be marked as rice culture. There are also households reported with small or no agricultural land ownership commonly known as landless groups. They are mostly agricultural laborers, wage laborers, and fishery dependent households. These households are most vulnerable to food insecurity and poverty because their livelihood activities are often seasonal and low- paying. Households with small landholding sizes have insufficient food production; thereby they are largely dependent on purchase for their food sources (Figure, 3). For agriculture-based households, their source of food is direct consumption from their own production. Hence, they have to diversify their livelihood in non-farm activities to fill in their income gaps (Rajbansi, 2010; Rai, 2017). The table 5 describes some of the major problems limiting/constraining the agricultural production and growth in the study area.

Table 5: Major Agricultural Problems Faced by HHs

SN	Major agricultural problems	Remarks
1	Crop raiding by wildlife from nearby Koshi Tapu	Regular problem faced by people
2	Gradual loss of land due to river erosion	Becoming small land holding size and landlessness
3	Inundation of low lying farm land	Especially during monsoon
4	Lack of irrigation facility	Crops damaged by draughts
5	Agricultural land susceptible to weed invasion	Invasive nature of weeds
6	Problem of transportation	Poor linkages between market and Tapu
7	Lack of storage facilities for vegetables	Agricultural products damaging
8	Expensive agricultural inputs	Improved seeds, fertilizers
9	Sandy (<i>balaute</i>) land	Susceptible to dryness

Source: Field Visit, 2017.

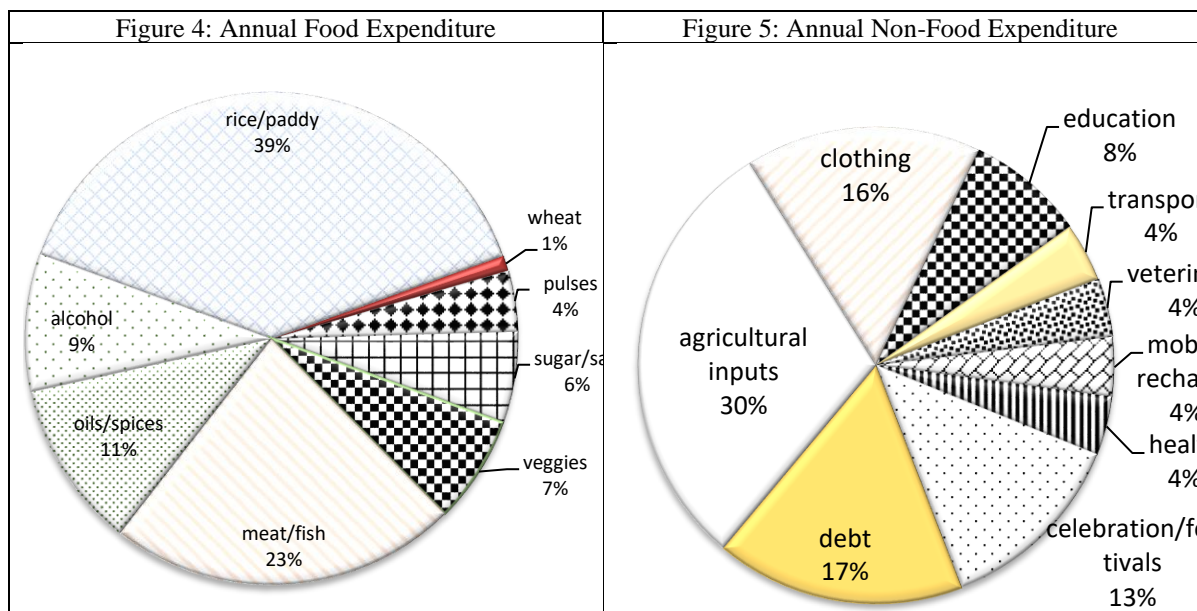
Livestock is the second most common activity practiced by ten percent (10%) of households as primary source of income. Besides this, there are nearly ninety-seven percent (97%) of households owning one or more type of livestock which explains livestock is indeed an integral part of Nepalese agricultural system (Khatiwada, 2010; Rai, 2018). Goat is the largest households holding of livestock type followed by cow/ox and buffalo/he-buffalo. Both livestock types are owned mainly for agricultural purposes and for self-consumption of dairy products and meat. Goat and poultry ownership was the most varied in terms of absolute holdings with ten and fifteen respectively. There are also various livestock problems faced by people in the area as shown in figure 5. The Tapu has big grassland used as grazing land by every livestock owning households, but it is sufficient only for monsoon season. During dry season especially for 3 months; Falgun, Chaitra, Baisakh, there is no sufficient feed for animals. To feed livestock many households required to buy fodder outside the Tapu. Access to veterinary services is another challenge for the households as the place has no such service providing center. Therefore, they had to call specialist from another place outside of the Tapu, thereby there is transportation, time and expensive service issue. During monsoon, veterinary service is inaccessible because of swelled Koshi River. Foreign migration is another economic fact in the lives of households in Srilanka Tapu. Households with migrants rely heavily on remittances to meet daily consumption needs, including food, school fees, clothing, and paying back loans.

The favored destination of migrants is Gulf countries like Saudi, Qatar which combined consists of seventy-one percent (71%) followed by Malaysia (10%), India (14%) and Korea (5%). Often such countries are basically the first choices of unskilled labor force and the job is tough and risky. Such migrants are all reported to be male aged between 30-40 years comprising forty-seven percent (47%), thirty-seven percent (37%) migrants are aged between 20-30 years and only sixteen percent (16%) are between 40-60 years of age. People with such age groups are the most economically productive segment of population and the most capable of physical labor. Migration of such labor force is unfortunate for the development process of any developing countries.

Access to Market: For people in Tapu, market is their prime necessity to fulfill basic food needs as they are heavily dependent on purchase as their food sources (particularly rice). Unfortunately, market accessibility is one of their major problems. They do have access to community based haat bazar which operates in weekly basis as other parts of Tarai region of Nepal (Mandal, 2008) but it is reported to cater only vegetables items, meat and locally available goods.

Similarly, there are only 5 shops i.e. three small and two medium sized in the Tapu. Small shops sell readymade food items especially for children. Medium sized shop includes rice bags, spices, stationery, few seeds variety, etc. The presences of medium sized shops in a way have facilitated the locals despite the high cost relative to market price. For fulfilling other major needs such as clothes, rice, agricultural inputs, kitchen tools, sanitary items, they required going to market centers which are outside of the Tapu and there is no easy transportation facility, people are compelled to walk long distances for an hour to three depending on market centers. Only few households have bicycles and motorbikes mainly used for commercial purposes. Physical remoteness therefore is great constraint for their mobility and moreover their access to social services and facilities. Also, most of them being low-income households, market price for even basic needs is expensive and at times unaffordable.

Annual Expenditure : There is greater likelihood that a household has poor food access when a higher share of total expenditures spends for food. It would not necessarily be a problem if a greater variety and diversity of foods were purchased. However, studies indicate that food insecure households will purchase cereals over other food items because they are cheaper and more filling (WFP, 2005). Similarly, in the study area, bulk of the food expenditures goes towards cereals in particular rice. High value food accounts for small share of expenditure whereas significant share accounts to tobacco and alcohol indicating drinking habits which is very common in Nepalese society. With respect to non-food expenditure, the bulk of the outlays go towards agricultural outputs; agriculture being the major occupation and land nature being sandy. Health and education account for minimal share which indicate households inability to meet key non-food priorities that are conducive to improve food security. On the other hand, debt repayments share significant percent of all non-food expenses which indicates heavy indebtedness often leads to household income going to repayments. Prominent expenditure to celebrations/ festivals can be again linked to Nepalese culture where usually Madheshi ethnicity tends to spend huge money in wedding which is also a fact in the sampled households. Expenditures on transport, veterinary are very low which can be best described by poor road infrastructure of the study area as shown in the figure.



Source: Field Visit, 2017

The study also shows eighty-five percent (85%) of households reported having access to one or more types of credit. The most common types of credit are reliance on friends and relatives and local lenders. It is evident that households rely more on informal sources than formal ones. It is also found that households' dependency is very high on debt which accounts for seventy-five percent (75%) of households. Most of the people living in this area take loan for the purpose of fulfilling daily consumption goods i.e. food and non-food items in difficult situation followed by education and medical expenses/health care and for performing social events.

Table 6: Causes of Debt in the Household

SN	Causes of debt	Household in percentage
1	To fulfill food and non-food needs in difficulty	25
2	To pay for education and medical expenses/health care	18
3	To perform social events (celebrations/ festivals)	14
4	To purchase agricultural inputs (seeds/fertilizers)	13
5	To proceed for foreign labor	12
6	To rent agricultural land	8
7	Others	10

Source: Field Visit, 2017

Due to remoteness and low income population in the Tapu, there are only two cooperative recently established for facilitating saving habits. There is presence of forest committee which has benefitted only few user-groups as it lacks inclusive participation. The studies also show presence of few prominent organizations like Social Empowerment and Building Accessibility Centre (SEBAC) Nepal and Plan International, Nepal have worked in providing boring machines, gobar gas plant (almost non-functional at present), solar panels at low cost in the Tapu. But these organizations have failed to sustain such assistances because of several reasons like most of the household are illiterate and financially unstable, only small percent of households are aware of those programs and organizations, most times elite group get chance to engage/involve. As a result, desired changes do not occur.

Land entitlement is also one of the land issues faced by the people in the Tapu. People of Tapu are residing in non-registered land (*ailani jagga*) as it is reported they have lost land to Koshi River as it changed its course unexpectedly during 2045 B.S earthquake. They have no legal land entitlements; thereby they cannot buy or sell land legally. It is usually done in mutual consensus between two parties. No attempts from the government are made to verify whether people in the Tapu have land or not. The question of land ownership has been faced by the people. Also, more than 90% of reported households do not have any land other than in the Tapu and in case of emergency (in specific flooding), they have no secure place to go for.

Health and Diseases : Access to toilets is one of the major issues in the Tapu. Out of the total, 47% households reported that they do not have any toilet facility and use the open land for defecation. The present scenario demonstrates the fact of households in the Tarai being reported as the highest incidence of no toilet facilities. Diarrhea is very common disease along with typhoid fever, intestinal worms, headaches and viral fever. Most of the diseases reported are water borne diseases which demonstrate inadequate sanitation facilities practiced by the households in this area. As the area is surrounded by Koshi River, flooding events are considered as natural phenomena. But fortunately the communities have not exposed to major flooding disaster like inundation of whole village, loss of human life, desertification etc. River erosions though have caused gradual loss of some agricultural lands lying near by the river bank. Human casualties due to boat capsizing are the major issue reported to occur every year in the Tapu. It is also evident that the whole area is always at some risk of flooding sooner or later but the government machinery is almost non-existent there. Hence, there is an urgent need to address the vulnerability of Tapu.

V. CONCLUSIONS

It is concluded that Srilanka Tapu as its subsistence agrarian economy is mainly based on households selling maize and purchasing rice with that income. For fulfilling remaining other food and non-food needs, livelihood pursuits outside of agriculture are widely prevalent among households as a response to unsustainable agriculture. Such livelihood diversification is responsible for enhancing rural household economy and food security by giving additional income. However, rural people are unable to depend on such activities as secure high return diversification as they are illiterate, low-skilled and low access to prerequisite resources and capital. Here, potential agricultural productivity is limited by poor access to modern farm equipment, low irrigation facility, expensive seeds, and fertilizers. Food constitutes large part of income expenditure for such low-income households; hence remaining basic needs are unattainable. Therefore, for small and medium farm households (almost 70%), borrowing money is common mechanism. The majority of loans taken are spent in unproductive purposes. For such households, indebtedness is heavy and persistence for long time period.

Also for more than 90% of households' access to credit is informal source (friends/relatives, local money lender), which indicates poor economic condition of people where indebtedness drain their savings ability. Similarly, the Tapu lacks access to proper sanitation, health services, safe water along with adequate education on hygiene and sanitation, health and nutrition and in food handling. Because of such underlying situation, people's poor health status contributing to poor biological utilization of consumed food has further exacerbated potential food insecurity among households. All these prevailing conditions indicate that the study area is potentially food insecure area. In any shocks and circumstances such as disastrous flooding, Tarai strikes, high inflation, adversely low agricultural productivity; area's vulnerability to food insecurity is very high. Immediate intervention therefore is required for addressing above poor figures in related to all elements of livelihood and food security. These include improving infrastructures, improving rural household incomes, providing targeted social assistance and welfare programs, supporting diversification of livelihoods and promoting dietary education. Special attention has to be paid to the marginal and vulnerable groups to improve food and nutrition security.

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